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February 9, 2000 Asahi Shinbun (The Major Japanese Newspaper)

Kawasaki Heavy Industries enters PV business.

Kawasaki Heavy Industries (Tokyo, Japan) has invested \$5 million into Evergreen Solar (Massachusetts, USA) last December. Kawasaki is planning to purchase PV modules from Evergreen and to assemble to "PV generating system" in its factory in Japan. .

Kawasaki starts providing the systems later half of year 2000, mainly to housing industries. Kawasaki seeks to promote its PV business at 5 billion yen (\$48 million*) in 5 years and at 20 billion yen (\$190 million*) in 10 years.

Kawasaki is convinced its success by providing lower cost PV system by 5% than comparisons. Evergreen Solar has developed unique PV modules at low cost.

* Calculated on \$1=105 yen. .

February 10, 2000 Nikkei Sangyo (The Major Japanese Industrial Newspaper)

Sanyo developed the highest conversion efficiency solar cells.

Sanyo developed the highest conversion efficiency solar cells at 20.1% in 10x10cm area. The higher efficiency cells can provide less installation area of the solar system by 20%, which results in a suitable for small and irregular roofs.

Sanyo has improved the “HIT” solar cells that had been developed in 1997. HIT has amorphous silicon layer on the single crystalline silicon wafer by CVD process. The improvement was introduced with three new technologies. The first technology is to reduce the contaminants as oxygen, carbon, and etc., in the bounds of amorphous silicon and single crystalline silicon. The second technology is to make the amorphous silicon layer thinner and wider area. The third technology is to shape the corrugate surface of the solar cells uniformly to reduce the reflection of the sunbeam.

The new technologies are easily introduced into a mass production because the composition of the cell and its processes are the same as the conventional one. Sanyo starts its mass production soon.

February 10, 2000 Nikkei Sangyo (The Major Japanese Industrial Newspaper)

Yokokawa Bridge and Kyocera developed new PV module usable as a roof.

Yokokawa Bridge developed the solar PV module that is usable as roof for houses, buildings and factories. Compared with the conventional rooftop PV systems, construction cost of the roof including the PV system can be reduced by 40%.

The new module is named “Yap Roof” consists of tempered glass and aluminum frame. Kyocera provides solar panels and Yokokawa provides its frames. The solar panel is see-through type and is suitable not only for roofs but also for walls, windows and facades.

The cost is about 80,000 to 100,000 yen (\$76 to \$95*) per square meter. Yokokawa seeks promoting its system at 5 billion yen (\$480 million*) in five years.

* Calculated on \$1=105 yen.